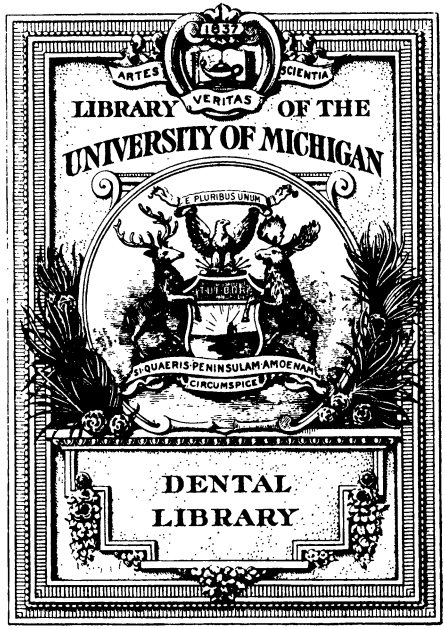
AMERICAN
DENTAL
JOURNAL

8
1909


ARTES
VERITAS
SCIENTIA
LIBRARY OF THE
UNIVERSITY OF MICHIGAN
E PLURIBUS UNUM
SI QUAERIS PENINSULAM AMOENAM
CIRCUMSPICE
DENTAL
LIBRARY

AMERICAN DENTAL JOURNAL

PUBLISHED ON THE FIRST OF EVERY MONTH BY FRINK & YOUNG

Vol. 8. JUNE, 1909. No. 6.

TABLE OF CONTENTS.

OUR POST GRADUATE COURSE

OPERATIVE DENTISTRY.

BY R. B. TULLER, D. D. S.

THE IMPORTANCE OF THE PROPER CONTACT POINT.

It may be safely said that the importance of the proper contact point for proximal teeth and proximal fillings is not as generally understood or comprehended as it should be by the average dentist, and even by many expert operators; and in consequence many otherwise perfect fillings eventually prove failures from conditions that invite recurrent decay as well as other troubles.

If a filling be ever so perfect in adaptation to the cavity, and in hermetically closing it, and the retention of the interproximal space in good form is overlooked and which depends upon a correct contact point or points, then the evil of food being forced in, and the destruction of the inter proximal tissues sets in, in proportion to the extent of the faulty contact that permits it. Food is rarely forced between contact points, but slides off on either side into the open embrassures according to nature's wise scheme in normally arranged teeth. Should any pass and lodge between the contact points a person is easily made aware of it by an uncomfortable feeling, and it is easily removed by a tooth pick or ribbon silk, and thus rarely remains long enough to ferment and begin action on the tooth substance.

The very fact, however, that food does lodge between teeth is evidence that conditions are not as they should be. In such cases unless it can be entirely dislodged, each meal adds more to the fermenting mass until it not only attacks the tooth, but trespasses destructively upon the interstitial tissues, producing irriation and absorption until the bucco-lingual arch of gum that normally fills the space, is turned into a concavity—a good retainer with the teeth on either side, for most anything foreign that may get into it.

Nature, we find, has not always provided the best form of tooth to insure a self cleansing contact point. The surfaces that approach each other are often found rather broad and flat or but so slightly

rounded or convexed that they touch so broadly as to rather invite the lodgement of food than making it easy to slide away. It is often a question with an operator who is caring for a mouth which he comprehends has such conditions, whether to attempt to prevent what is quite sure to follow sooner or later, by separating and inserting fillings or not in sound teeth for the purpose of making an improved contact. Nature does not always set the teeth in what we call true normal alignment in the arch, and so the dentist is frequently called upon to correct such irregularities; and one thing is pretty sure, that where the contact between two adjoining teeth is imperfect, decay if nothing else will call for some intervention on the part of the dentist.

When, from the decay between teeth, filling is indicated, it is up to the dentist to not only restore lost tooth tissue artificially and securely, but to make sufficient separation so that the contact with the neighboring tooth will be improved over the original conditions; that is to say, that where possible, bring about in the shape of the filling or fillings the nearest approach that can be to ideal or self cleansing contacts. That means a small, or properly proportionate, convex contact point—the surfaces rapidly curving away in all directions from the point of touch, to a safe distance from the neighbor and forming an embrasure that is reasonably broad and freely open. And further than this, the lateral margins of the cavity should be extended to such curving away of the tooth as to make such margin self cleansing; or where the excursions of food in masticating sweep over and freely away.

If such poorly shaped teeth as regards contact conditions are filled and the fillings simply finished according to the original lines of the tooth—that is, broad and flat in contact—then there will be a repetition of the original trouble of food lodgement; and as soon as it causes absorption enough of the interproximal tissues to bare the tooth cervically, colonies of microorganisms will lie in contact with the exposure and attack the tooth so that it in time burrows in and undermines the good filling. Or if it be a filling imperfect in adaptation to the cervical margin or rough in the finish at that point, the sooner will the necessity of refilling occur. A proper contact with the neighboring tooth will thus do much to add to the life and usefulness of the filling.

Aside from this feature of recurrent decay and ruination of an otherwise good filling, the disaster that comes to the interproximal tissues, leads on to serious so called conditions of pyorrhea. Every

practitioner can recall instances of deep discouraging pockets between the teeth when the advancement of the disease at other points is but comparatively incipient.

Now, perhaps most all dentists of modern ideas comprehend the value of constructing a proper contact point and so build their fillings; but when they come to finish those fillings they sometimes in one fell swoop ruin what they have designed and carefully constructed; and the sandaper disk rapidly revolving and permitted to pass between the teeth is responsible for this. It is safe to say that no operator in the space usually gained for proximal work, can properly shape up a contact point with a sharp cutting disk. Unfortunately the disk is too much used for just this thing, and if, when the finishing is done, the operator finds that in his haste or heedlessness, his well intended contact point has mostly disappeared, he will find it difficult to gainsay the statement made at the beginning of this article, that the average operator or even many experts do not fully comprehend the importance of the proper contact point.

For who among them all, after having made a large, very perfect gold filling, for instance, but with spoiled contact point, will undo his work and begin over again to make it right? No, the tendency is, knowing it to be a very perfectly constructed piece of work, barring that little flattened point, he will pass it as quite good enough after all. But will he go on repeating that error in other similar cases—slashing about too freely with a rapid and sharp cutting disk? If he does, then he does not realize as he should the importance, after all, of the proper contact.

Taking a couple of proximal gold fillings, to illustrate, the most approved method of finishing is about as follows: Trim up on either side—buccally and lingually—with suitable disks rotating them towards the occlusal so that there will be no chance of their catching and going in a flash over in between, and shape up as far as may be without allowing the disk to pass in between. Finish cervically with burnisher and trimmers until a *narrow* strip can be passed through and use these, not straight, but on the curve of the tooth at the cervical. Then work cautiously towards the contact point, but not through between. After everything is done by the one little point of contact, use a thin spatula and pass between; and follow perhaps with a thin bladed burnisher, working all around in such condensing as may be done. Follow them with any fine stripes that polish—

not cut—and go over and through until done to satisfaction. The contact point will be as it was intended, or at least without any undesired flattening. It takes but little more time to finish up this way and the patient gets better service.

BACTERIOLOGY AND PATHOLOGY.

BY GEORGE W. COOK, B. S., D. D. S., CHICAGO, ILL.
DEAN OF DENTAL DEPARTMENT, UNIVERSITY OF ILLINOIS, PROFESSOR OF BACTERIOLOGY, UNIVERSITY OF ILLINOIS.

In the discussion of proteids and their important physiological function, it is important to bear in mind that as a nutritive agent they play an important role in digestion, assimilation and nutrition. Proteids undergo an interesting change to form an organic combination with carbohydrates and fats. This has caused an immense amount of investigation relative to their chemical composition. Proteids are termed very complexed bodies, highly nitrogenized with a high molecular weight and are the principal constituents of the animal tissue. There are several different groups of proteids. In speaking of them in general they are called proteins, but when speaking of them singly they are called proteids. Of course their chemical composition differs somewhat, according to their location and their function as agents in the chemical combination of living organic substance.

The methods for studying protein substance are not all of the same value but to a degree they may substantiate each other. The so-called carbon proteids, if we could speak of them in that light, are found principally in the nuclei of the higher forms of the tissue cells. This form of proteid apparently contains no sulphur but is rich in nitrogen. In reaction it is a monobasic substance. The orithins belong to this group. There is a glutamic acid that has somewhat the same chemical combination and is a gelatin or a gluey substance of the tissues that is found in great abundance in all animal and vegetable organic material. In this same group is also classed the histidins. These proteids have a peculiarity of containing within their molecule a substance that is capable of breaking up into two groups called the pyrrol group and the indol group, and from indol skatol is broken off. In the indol group are the compounds that are so universally present in the decomposition of meat by bacteria. When

bacteria decomposes connective substance, indol, skatol and phenols are some of the intermediate compounds formed and are supposed to come directly from the nuclein of the tissue; and through this decomposition process is where the bacteria are best able to get their nutrition.

Bacteria, so far as we know, are the only compounds that are capable of breaking up and synthetizing proteids from the animal tissue. This process in itself is an interesting biological phenomenon that is worthy and has created some of the best scientific researches of modern times. It is a question of the highest importance if we may not through this chemical disturbance of the nucleus of the cells find that it is through this process that bacteria produce their toxins. When we consider that the toxin is evidently a synthetized product of the bacterial cells we may reason that possibly the toxin is the direct product from the nucleus of tissue cells that has undergone molecular rearrangement in passing from its physical activities in the tissue cells to a toxic product in the bacterial cell. So the actual value of a thorough understanding of the chemical constituents of proteid is of a very great importance.

The interchanging processes that go on in the tissues are constantly rearranging the proteids as well as all other compounds. It is a well-established fact that when bacteria act in the tissue producing certain symptoms that we recognize it as disease. The toxins that are produced by bacteria and must of necessity be a synthetic product produces certain chemical and physical changes in the body of the host, and these toxins have an affinity for certain cerebral centers and affect these centers in such a way as to increase the temperature of the body. All of these processes come through the action and interaction of that molecular compound known as proteid.

The so-called rise of temperature of the body comes about through some form of infection. By some the rise of temperature is considered as very important in the destruction of bacteria. It is a well-known fact that, as a rule, bacteria live at a normal body temperature equally, if not as well, as does the animal or any other form of plant life. Investigations show that the spirillum in relapse fever lost their motility at 40° C. much more quickly and much more easily than at 70° C. Koch found that the tubercular bacilli retained its pathogenic properties from 37° to 38° C. much better than at any other temperature. With the factors in view that temperature influences bac-

teria we see the reasons for the rise of temperature in the body when the body has become inhabited by bacteria. If it is a local infection, like the pus-producing organisms, we have a rise of temperature that is generally destructive to bacteria.

Nature has provided so many important phases for biological study, and there is no place more interesting in such studies than that of infection in the body of the higher forms of life. The moment bacteria enter the tissues there is a cellular antagonistic property that immediately puts forth a phenomenon that is seen in no other form except in the cellular activities; that at once proceeds to rid the tissues from the invasion of this organic substance, that would eventually destroy the life processes of the bacteria if their virulency is not too great, and thus prevent all forms of destructive changes in the tissue cells.

Certain forms of bacteria, when they are grown in proteid media, and especially a proteid that has physical activities and is carrying on the process to maintain its natural equilibrium in a living form, seem under certain circumstances to carry in or take within themselves a certain cell aggressiveness that we call virulency. This virulency of bacteria is to maintain its own life process and maintain its form of life through the greatest destructive influences; so the action of bacteria and the action of tissue cells against bacteria is a constant warfare that is carried on by these two forms of life, with a hope that one or the other will succumb to the action of the other. Bacteria grown outside, and free from the influences that it meets in the body, mak take on itself the possibilities of complete non-virulency. The bacteria, as well as the tissue cells, are influenced largely by the conditions under which they live. The fact of having to fight for the maintenance of life makes them more capable of fighting, and it is through this phenomenon that it may be possible for these organisms to gain and maintain their virulency. If we adopt the theory, and I might say that it is no longer a theory but an experimental fact, that the pathogenic properties of certain of these organisms comes through their environments, we are more than prepared to believe that the environing conditions of bacteria play an important role in the destruction of other forms of life. The diphtheria germ seems to exist without being able to create so-called pathological processes. Bacteria in disease is the result of certain habitual tendencies that must and always will be an important factor in disease.

(To be continued.)

Our Foreign Department

THOMAS L. LARSENEUR, D. D. S., Foreign Department Editor

ATROPHY OF THE ALVEOLAR PROCESS.*

BY DR. MICHEL WURZBURG.

Translation Requested by Dr. L. P. Haskell.

(*Le Laboratoire et le Progres Dentaire reunis,* Paris, Dec. 6, 1908.)

(Continued from May.)

On table II we have the measures of normal maxillaries, while table III gives that of the atrophied maxillaries. We have already

Fig. 17.

Fig. 18.

spoken of the measures 1 to 4 incl. No. 5 with the number 31 and 28, and No. 6 with the numbers 31 and 28 would tend to show that some

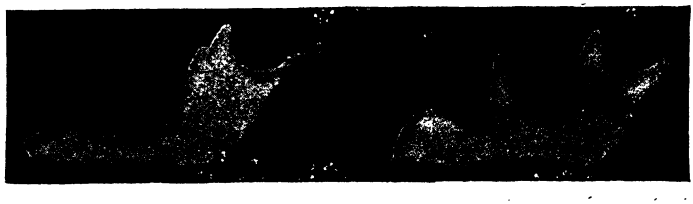


Fig. 19.

Fig. 14-37. A number of maxillaries superior and inferior *in situ.*

Fig. 38 is that of a superior and inferior maxillary normal.

TABLE II.

Measurements of normal maxillaries (measured separately). (See Figs. 3, 4, 5, 6, 10, 11, 12).

	1	2	3	4	5	6	7	8	9	10	11	Average of the Figures	
1	36	26	24	38	36	32	30	29	28	37	34	32	
2	32	26	23	37	35	30	32	30	27	34	31	31	
3	34	22	37	34	31	30	31	29	26	29	30	29	
4	30	18	26	27	28	29	27	26	22	28	24	26	
5	37	31	33	33	34	26	27	29	29	34	30	31	
6	34	31	33	31	33	30	29	30	29	33	31	31	
7	22	17	16	17	22	20	21	17	19	21	19	19	
8	14	14	10	10	13	12	12	11	12	14	14	12	
9	15	12	12	16	16	14	14	15	11	14	12	14	
9a	14	11	14	16	15	12	12	14	12	12	11	13	
10	37	34	34	43	42	38	36	34	40	43	39	38	Inferior maxillary.
11	12	11	12	11	12	12	12	11	12	11	11	12	
12	29	26	24	13	19	21	24	19	22	25	26	22	
13	30	24	24	33	29	30	30	26	24	22	24	27	
14	17	14	16	17	17	15	16	14	14	17	16	15	
15	15	14	13	10	12	14	13	14	12	15	15	13	
16	18	16	15	17	16	17	16	15	16	17	16	16	
17	25	20	21	20	21	22	21	22	23	20	21	22	
18	10	8	8	8	9	9	10	9	8	9	10	9	
19	33	31	30	30	32	21	32	30	31	30	31	30	
20	14	13	16	14	16	15	13	13	14	16	16	15	
21	103	86	104	102	103	104	102	101	96	100	103	100	
22	31	28	29	28	30	24	23	27	28	27	28	28	
22a	21	22	19	17	19	20	18	18	19	17	19	19	Glenoid cavit
22b	12	12	11	12	10	13	11	12	11	12	13	12	
23	50	45	48	49	47	49	46	48	49	48	47	48	
23a	30	31	25	26	28	29	27	28	26	29	30	28	
24	56	59	60	61	57	59	60	58	56	55	60	58	Inferior maxillary.
25	88	85	88	87	86	87	84	88	87	86	85	86	
26	111	115	115	112	113	114	112	115	112	111	112	111	
1	26	21	21	20	22	22	21	20	23	26	....	22	
2	38	36	33	33	39	38	37	39	37	33	....	36	
3	19	16	13	12	12	19	18	14	13	14	....	15	Superior maxillary.
4	44	40	43	40	41	43	42	40	40	41	....	41	
5	35	33	34	36	37	36	36	35	34	35	....	35	
6	52	51	51	53	19	51	52	50	51	53	....	51	
1	121	....	....	120	119	122	....	118	....	....	117	Bit. 119	
2	142	....	....	146	139	143	....	147	....	....	149	Bip. 144	Measurement of the skull
3	51	....	....	50	52	51	....	53	....	....	49	Circom. 51	
4	36	....	....	35	36	34	....	37	....	....	45	Sag. 37	

NOTE—In order to facilitate the researches of these measurements, the number of the first column corresponds to the number under the cuts.

relation exists between these two measures, but under examination of each measure separately, important oscillations will be found between 5 and 6.

The normal coracoid process has a height of 19 millimeters and a width of 14 millimeters; the atrophied process has a height of 14 millimeters and a width of 13 millimeters.

TABLE III.

Measurements of atrophied maxillaries (measured separately). (See Figs. 7, 8, 9).

	1	2	3	4	5	6	7	8	9	10	11	12	Average of the Figures.
1	27	20	22	23	20	21	23	22	21	34	29	28	24
2	25	18	17	22	21	21	21	21	21	32	25	26	22
3	22	17	14	17	22	16	19	17	16	31	20	28	19
4	19	12	14	15	20	12	17	15	15	28	18	21	17
5	29	24	27	22	24	20	28	31	25	35	34	33	28
6	28	26	27	25	23	23	28	32	26	32	31	31	28
7	12	14	12	10	10	11	12	16	12	17	12	16	13
8	15	9	12	15	14	11	12	14	12	17	15	14	13
9	12	12	11	10	10	11	12	14	19	16	12	15	13
9a	13	16	17	14	14	11	16	17	14	13	15	14	14
10	27	33	29	28	26	27	32	41	31	33	40	38	32 } Inferior Maxillary.
11	13	10	13	13	9	16	12	15	13	13	16	16	13
12	25	19	18	11	26	22	22	21	22	29	22	15	21
13	25	25	23	21	17	18	19	24	26	27	28	28	23
14	12	10	15	11	9	9	13	15	10	13	14	12	12
15	12	10	8	11	11	14	13	15	11	15	16	11	12
16	16	14	12	13	15	12	13	16	14	16	17	14	14
17	16	19	18	18	18	14	14	23	20	23	21	18	19
18	7	7	8	6	8	5	8	9	9	10	8	8	8
19	29	27	30	34	28	25	28	27	30	30	28	27	29
20	11	12	11	8	11	10	11	22	11	25	12	14	13
21	95	92	95	95	88	89	86	102	93	100	98	87	93
22	20	23	25	26	27	24	26	22	24	....	....	....	24
22a	13	16	10	12	13	12	10	9	17	....	....	....	12 } Glenoid Cavity.
22b	10	9	6	4	8	9	3	6	8	....	....	....	7
23	51	49	46	44	49	40	45	42	46	47	43	44	46
23a	30	30	32	32	28	20	26	25	31	28	30	31	29
24	70	69	69	73	72	68	67	67	72	72	70	60	69 } Inferior Maxillary.
25	84	85	86	88	82	80	76	86	82	88	88	75	83
56	107	102	105	110	98	100	100	113	104	107	109	95	104
1	16	10	12	15	14	18	11	17	13	12	9	....	13
2	25	31	22	29	28	34	29	24	33	30	22	....	28
3	19	12	15	13	15	17	15	10	11	12	10	....	13
4	38	36	30	37	32	43	37	29	39	37	32	....	35 } Superior Maxillary.
5	38	34	33	35	34	29	32	32	38	33	35	....	34
6	45	45	37	43	46	44	45	44	46	41	40	....	43
1	132	102	98	114	124	127	121	105	146	....	....	....	Bit. 119
2	141	133	126	130	147	152	137	122	120	....	....	....	Bip. .....134 } Measurement of the skull.
3	54	49	46	51	54	54	57	50	....	....	....	....	Circ..... 52
4	37	....	....	36	38	38	35	35	....	....	....	....	Sag..... 36

NOTE—In order to facilitate the researches of these measurements, the number of the first column corresponds to the number under the cuts.

The normal condyloid process has a height of 13 millimeters and a width of 14 millimeters; the atrophied process has a height of 14 millimeters and a width of 13 millimeters.

This demonstrates to us that there is a shrinkage of the muscular insertion and also shrinkage of the temporal muscle.

The width, 10, is in a normal case, of 38 millimeters, and in an atrophied case of 32 millimeters. This seems paradoxical, as we can suppose that a cavity which is surrounded by bone should become larger when the bone disappears.

The dimensions of an atrophied case should have been larger, but it is the contrary which takes place; in fact, as a matter of proof, the disappearing of the bone substance takes place on the posterior and anterior sides of the ramy to carry equally on the anterior and posterior borders of the condyle of the maxillary, in such a way that a reduction in the width of the condyle takes place.

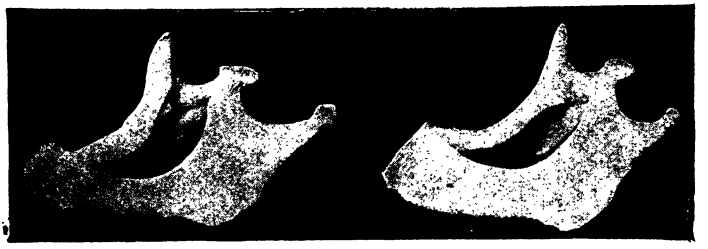


Fig. 20.

This reduction compells us to place the instrument for measuring more in the center.

Then we have the numbers 12, 13, 14, 15, which in normal cases

Fig. 21.

gives: 26, 27, 15, 13 millimeters, and in atrophied cases 21, 23, 12, 12 millimeters.

In these cases it is the length which has specially diminished, but this is not, to a certain extent, due to the loss of substance in the angle

but by a greater loss of the sides (walls) of the condyle of the maxillary.

The result of this is the shrinkage of the superior parts of the ramy and by an increase of the maxillaries we will obtain an obtuse

Fig. 22.

angle. I do not wish to affirm that the absorption of the inferior part has no connection with the flattening of the angle.

As up to the present time, the loss of the substance in the angle

Fig. 23.

is said to have been caused by this flattening, the following measures will furnish us an example of this.

The No. 16 normally has 16 millimeters; atrophied, it has 14

millimeters, or a very small difference. I thought I could foresee in this region a greater difference.

The size of the capitulum in the Nos. 17 and 18 is of 22 and 9

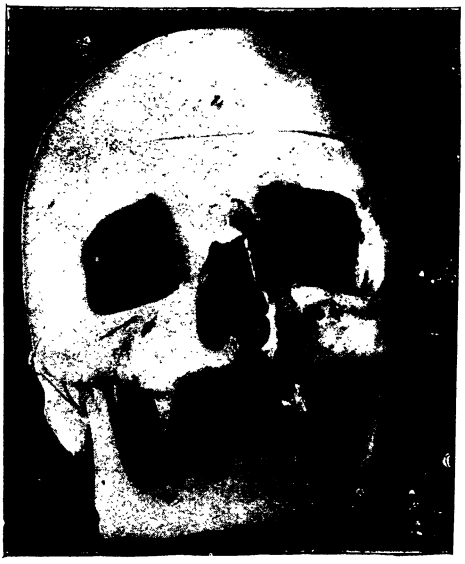


Fig. 24.

millimeters normally, and of 19 and 8 millimeters atrophied; we may readily observe here a regular shrinkage.

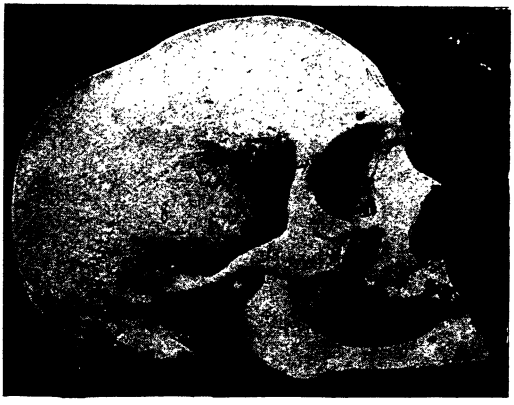


Fig. 25 .

No. 19 shows that the minimum disappearance of the protuberance constitutes the difference of measure and that we should not draw the conclusion that there is lessening in the direction of the body of the maxillary.

Fig. 26.

Fig. 27.

No. 19—Mental foramen, mental protuberance having normally 31 millimeters and in atrophied cases 29 millimeters.

No. 20 shows us that the difference in height is not only caused

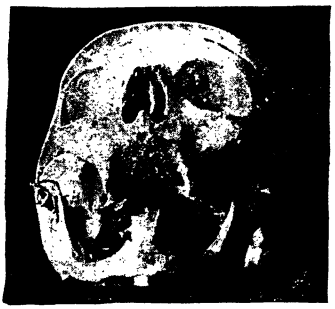


Fig. 28.

Fig. 29.

by the absorption of the inferior maxillary but rather by the absorption of the alveolar process.

No. 21—Mental foramen capitular. The normal medium gives 100 millimeters and in atrophied cases 93 millimeters, showing us the noticeable difference in length.

A noticeable shrinkage is to be observed at the cotyloid.

Fig. 30.

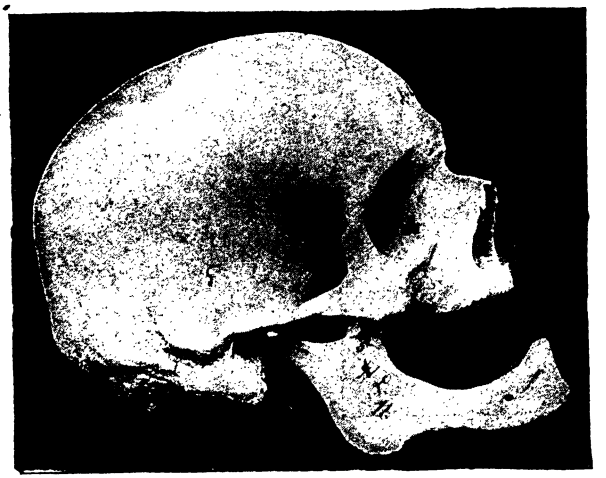


Fig. 31.

Diameter	Normal	Atrophied	
Lat. Med.	28 mm.	24 mm.	The flattening is caused by the shortening of the articular tubercle.
Mes. Dist.	19 mm.	12 mm.	
Height of tubercle	12 mm.	7 mm.	

Let us now consider the interior measures of the inferior maxillary.

Fig. 32.

Fig. 33.

		Normal	Atrophied
No. 23.	In the mental foramen region exterior measurement	48 mm.	44 mm.
No. 23.	Interior measurement	28 mm.	29 mm.
No. 24.	Region of the third molar.....	58 mm.	69 mm.
No. 25.	Mandibul. for. ment. for. sin.....	86 mm.	88 mm.

These figures show us that in cases of atrophy of the inferior maxillary there is equal shrinkage in the interior part.

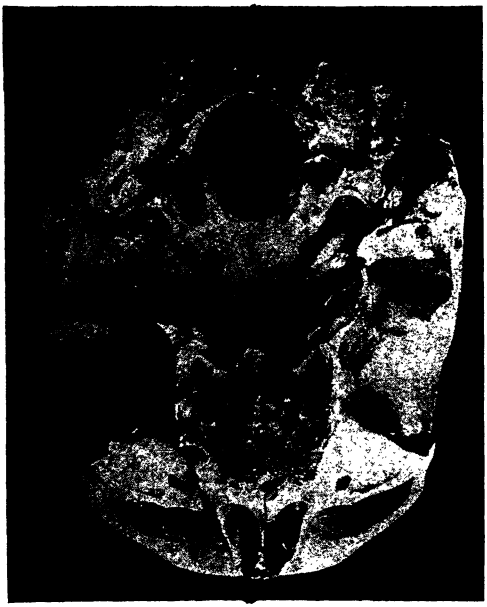


Fig. 34.

Apposition and absorption are the two factors contributing to the growth of bone and atrophy of bone, but in the latter absorption is the main cause.

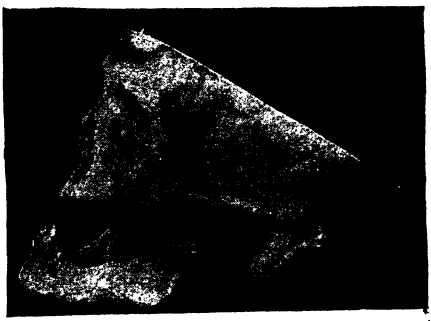


Fig. 35.

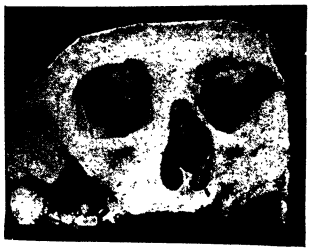


Fig. 36.

Fig. 37.

No. 26—Middle of the capitulum, middle of the central incisors: Normal, 111 millimeters; atrophied, 104 millimeters, showing us that the shrinkage has taken place in the atrophied maxillary.

Superior Maxillary—In the superior maxillary we find the following figures:

		Normal	Atrophied
No. 1.	Nasal spine. Alveolar *limbe*.....	22 mm.	13 mm.
No. 2.	Inferior foram. Alveolar *limbe*.....	36 mm.	28 mm.
No. 3.	Molar orb. lin. Alveolar *limbe*.....	15 mm.	13 mm.
No. 4.	Infra-orbital groove. Alveolar *limbe*...	41 mm.	35 mm.

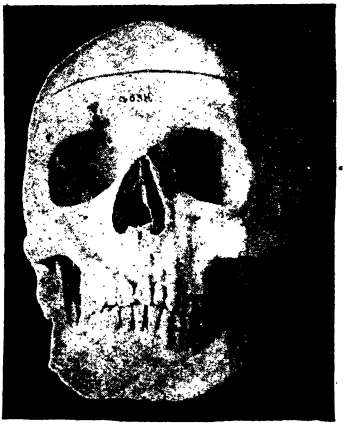


Fig. 38.

There, a shrinkage of the height of the maxillary is very well marked, and we equally see the palatine process measured in length and width.

The Nos. 5 and 6 normal 35 millimeters, atrophied 43 millimeters show us that there is not a great deal of difference existing in the mouth, but that a great difference is to be noticed in the length, which may be caused by the shrinkage of certain parts of the intermaxillary bone.

Regarding the measures of the skulls in table III, 15 skulls were used, 9 atrophied and 6 normal.

The figures are:

	Normal	Atrophied
Bitemporal	119 mm.	119 mm.
Biparietal	144 mm.	134 mm.
Circumference	51 mm.	52 mm.
Sagittal	37 mm.	36 mm.

A greater difference is noticed in the biparietal diameter.

If several maxillaries are examined, we notice that with some atrophy will have taken place in the alveolar process only, while in others atrophy is equally spread between the alveolar process, the body of the maxillary, the ramus and the condyles of the maxillary. In the first instance this may be explained by the premature loss of teeth (*traumatism, pyorrhea, alveolaris, caries*) ; in this case we are dealing with simple alveolar atrophy. This atrophy has taken place only in the parts, whereby the loss of the teeth, the functions of the maxillary were destroyed. In the second instance it is a case of complete senile atrophy. The maxillary No. 13 is interesting (see Fig. 13). In this case atrophy of the whole inferior maxillary has taken place. Probably this was preceded by the loss of the teeth.

The maxillary 14 is atrophied from the mental foramen towards the posterior part, the body of the maxillary and the alveolar process are entirely preserved. The superior maxillary show us that atrophy takes place almost exclusively on the alveolar process and very seldom on the body of the superior maxillary.

This is probably due to the fact that superior maxillary has other functions, and also to its relations (nasal cavity, etc.) which are still subsisting when the act of mastication has almost ceased, while in the case of the lower maxillary the functions of articulating and mastication are always existing.

ORIGINAL CONTRIBUTIONS

TOOTHSOME TOPICS.

BY R. B. TULLER.

Well, what do you know 'bout that 8000$$?

My pa knos sompen about 80.00$$.

Ma she red 'bout the 8000 an' sed to pa, "Now, what do you know 'bout that?"

Pa sed he knowd the dentist who got it, an' he knowd it was all true; 'cause everythin Dr. Jonsin sed wuz *allus* true.

"Well," sez ma, "it is a funny thing that one ov these upstarts jest out ov collige can go to work an' collect sich feez as that with out enny trouble, an' a man like you, Joel, who lernt the perfessers sum things when you wuz in collige, an' maybe lernt this same feller sum stunts they didn't kno up to then, has hard work gettin' bred and butter feezs. If sich a feller can git ate thousan, you outer be gittin ten or twelve thousan. Joel, you wanter git a hunch on yerself if munny is layin' 'round loos like that."

Pa sed, "Yessum, I did lern that same feller stunts 'bout how to make rubber plates while you wait, an' foot ball all so, &c. But, ma, that feller has got a office on the swellest part ov Michigan av. where there is a string of millonairs is passin' in otter mobiles all the hull time. Gosh, if I wuz down there, or down town sum where there, I cood jest as well be gittin them feez as not. Why that feller wuz n't a perfesser even in the collige; he wuz a demun straiter an' I showd him lots ov things, an' some ov em I don't doubt has helpt him ern sich feez. I'm goin' down to see him. Bille is all rite, an' Ime glad he got the munny. It duz one thing enny way, it helps every other feller to get better feez."

"Has it helpt *you* enny yit, Joel?" ast ma.

"No, but it's goin' to," sez pa. "If he can get ate thousan for a continuous rubber set an' a little cast gold an bridge work, I otter git

ate hundred at least if I ain't down town; an' by golly Ime goin to try. If you don't ast you don't git. It jist takes nerve; an' by cracky! I'm goin' to put up the nerve—an' the prices."

"Well, Joel," sez ma, "you better not go up to eight thousan all at onct, but work up by eezy stage coaches."

"Leave it to me," sez pa, an' she did; but sum way it didn't work. Pa has one ritch lady over on the boolevard who comes to him, an' pa knoing she is worth twenty five thousan $$ er more, sed she'd be the first one he'd raze on; an' so to paive the way he red to her out of Dr. Jonsing's little book how the young feller got 2 thousan, an' five hundered fer one Job, an' eight thousan fer a nuther. An then he tole her how he had lernt this feller a hull lot that he now knows—"Things," sez pa, "that *I* invented an' dug out of my own hed, an' from aktul experience, fore he thot ov dentristy. All what I knew I gin up free gratis for nothing to perfessers an' all them fellers in the collige. We older fellers otter get more than the younger fry, an' ennyway dentristy has gone up. We all hav to git more. We hav to pay more for plattinum which are extensively used in dentristy."

She listen becaus she had in that rubber dam thing an' coodent talk—except after battin' her eyes at pa awhile she did say sompen like this: "Swish swash swum ik oodle shucks. You scant cum snone of shat flub dub on sk-me, docsher Buckschum."

All the same when pa make out her bill he put down one large cast gold inlay 25.00$, but all the rest wuz at old regular prises. Well, wen she got the bill 'bout all she saw was that the gold inlay was about twiste what she had ever payed; and so she jest cut the bill in 2 an' that made a lot of the other work only ½ what it should be, an' she was so hot about the dubblin up, as she sed, she'd pay that 'er nothin. So pa wuz out stead of in on that deal but hatto submit er lose her, so he submit.

Ma sed, "Joel; you pusht up a step that time and slipt back 2," Then pa sed, "Well, it is jist this way, ma, if you wanter git millenery prices, the only way is to git among the millinerys."

"Well," sed pa, later on, "by gosh, her danged old inlay wuz holler enny way, but she don't kno it, an' it serves her rite."

Then he red the same big feez item to a big commercial man he had made some gold inlays fer, and was just setting a bridge fer. "That's goin' sum," he said "fer a young feller. I can't get but 800 fer the same work. I've don more now fer you than he

done, an' ther is more gold in it. Oh, yes, I know all 'bout what he dun, fer I lernt him a lot of what he knows an' he called me in to give him sum pinters on that 8000 case, so I know. *You* are gittin a aight thousan Job fer aight hundered. I don't bleeve in robbin the peeple. I jest love to work fer very reesonable prices."

When the man got out of the chare he pulled out his chec book an' fountain pen, (an' pa's face lit up) and he wrote out $8000. I seen him do it, and then, lookin' it over to see if it waz all O K, he jist jabbed a dot in the middle of the aight thousan like this: 80,00.

Well, pa kneeded the money an' took it an' went out an' bot some flour which ma kneeded.

Gosh!

DEVITALIZATION.

I ask you to permit me to use considerable space of the AMERICAN DENTAL JOURNAL, hoping I may say something that will be helpful to some of our profession, to a better understanding of the reason why so many teeth are either lost entirely, after causing much pain to the patients and worse than physical pain to the dentist, because they continue to irritate after devitalization and after "immediate" root filling, and at the same time reply to the two gentlemen of Hot Springs who so vigorously attack an excellent method of which they know little or nothing (from experience at least).

This is my second reply to Dr. Huff. In my former "open letter" I tried to make the point that, while the removal of the nerve *in its entirety* is all right, *providing* the space is *completely* filled *from apex to crown* with some opaque, non-irritating substance, it must be admitted—and I gave proof positive of the fact—that not half of such cases leave the dentist's hands (speaking of dentists in general) properly done, and should never be attempted in those teeth whose roots are very difficult to work in. For instance, the upper bicuspids and all molars with rear or posterior approximal cavities. The reason I include all of these teeth all the time is because we have no means of diagnosis whereby we can tell how difficult their roots may be to operate in. Even the most expert of our experienced dentists frequently fail to accomplish the operation, and must, therefore, and *do* resort to the expedient of burying within the pulp chamber a wad of asbestos or cotton lint saturated with some antiseptic or

mummifying paste. Then, if trouble results, they attribute it to "taking cold" in that tooth!

Then we must admit that it is, to say the least, very difficult for the most expert and experienced operator to fill *all* roots *properly*. Does not common sense suggest that some simpler method of saving teeth is needed. And, whether needed or not, the fact remains, and no sane man will deny it, the majority of dentists of the world are resorting to various means of getting around a method so likely to result disastrously. And Dr. Akers himself, who wants to down Nerve Qui-e-tus, unwittingly acknowledges that he himself resorts to a mummifying paste to secure his defective root-filling against failure. Does he not advise to pump an antiseptic paste into the roots? Why pump an antiseptic or mummifying paste into a root if not to prevent some portion (more or less) of nerve left in the root from decay? If the nerve is all taken out before any septic condition arises and the root is properly filled with some opaque and harmless substance, such as gutta percha, cement, amalgam or beeswax there will surely never be any trouble. And let me say right here that is the way I fill all roots which I do fill, and I do fill all roots of the six upper anterior teeth and the lower bicuspids and cuspids and all upper centrals and latterals. I plug the apical foramen with gold (first ream them to apex with G. G. drill), rolling a pellet of gold between my thumb and finger. It should be unnecessary to state that before doing so I see to it that the root is clean—absolutely—and dry, and the last application is always campho-phenique, of which I wipe away all surplus with Japanese bibulous paper. By the way, that (and cotton rolls) is the only preparation of cotton I ever use, and I use so much of the former that my regular supplying house once wrote and asked me if I ate it, because I used so much of it. And I don't fail to have my thumb and finger absolutely, *absolutely,* clean. This will prevent all trouble.

I began using Nerve Qui-e-tus in Galveston, Tex., in the year 1880, about ten years before our brother Dr. Akers began practice, and if a dozen cases have proven failures I have not heard of all, and I have filled thousands. And let me say I am, oh, so thankful to Dr. Akers for not condemning N. Q. "yet" (of course he's going to), especially as he admits that he has never given it a trial, only applied it to one nerve, and as that got "sore to the touch" he extracted that nerve and applied *his* favorite mummifier.

Is Dr. Akers fair? Now, let me say that as far as I am personally concerned in the profits of N. Q., it would make little difference with me if nobody besides myself ever used it. Don't let the doctor get it into his head that I am a dishonest schemer; too many dentists who never have known me personally are of the same opinion as myself regarding N. Q. for any thinking and unprejudiced man to doubt its virtues.

I beg of Dr. Huff not to get the idea that I do not know how to save teeth by root filling. I want to remark that I have a good practice, and probably have more nerves to deal with than any other dentist in our city of 30,000 people because of the great popularity of Nerve Qui-e-tus in Beaumont, as it becomes better and better known.

Dr. Akers seems very much inclined to doubt my method of devitalizing, though he admits he only applied it once, and the tooth got "sore," so he took out the nerve. The directions accompanying N. Q. say: "A tooth may become tender to the touch within the four days. In that case leave it in *no* longer than four days, but remove the application and fill." Dr. Akers evidently did not pay any attention to the directions. He tells me to extract the nerve and pump "pustulene" into the root canal. What is the effect of that preparation if not to prevent septic formation, and why fear a septic condition if the nerve is all taken out of healthy root unless some nerve is left remaining in the canal? Tut, tut, man, you have unwittingly acknowledged that you do use a paste to cover up your defective work. I can't see any good reason why the baths of Hot Springs, or any other springs, should develop that which otherwise would remain dormant within a devitalized tooth; not if the individual's system is in a healthy condition. We all know that colds will affect the weakest location, or that part with the least power of resistance; namely, the diseased or impaired portion of the body. There is a vast difference between the teeth we devitalize and those we found in a septic condition, the latter being by far the most difficult to save for years of usefulness. But for me or anyone else who employs Nerve Qui-e-tus No. 1 to devitalize and No. 2 as a finishing dressing (there is positively no paste; nothing visible left in the tooth under the filling) it is the easiest thing in the world to save teeth by devitalization and mummification (not mummification of the whole pulp). The round

bur removes all it can reach, which is all of the pulp not within the roots.

I do not advocate the attempt to mummify the pulp occupying the chamber which is within the crown of the tooth. There is where laziness and downright robbery take place. Such slovenly work as that is absolutely inexcusable, and I can't believe it to be durably beneficial. I believe it to be the duty of every dentist to do every piece of work as well as he possibly can. Let him strive to do each piece of work better than any of his previous work. He should be a subscriber to and read several good dental journals, thereby absorbing the varied experience of others. He should cultivate *broadmindedness,* eliminate all conceitedness and, as St. Paul said, "Try all things and hold fast that which is good."

I want those who are so skeptic about the future results of the N. Q. method not to forget that it is unfair to try to prove N. Q. is not the thing by referring to the results experienced where *arsenic* was used. Nerve Qui-e-tus is not arsenical paste, and it is unfair in the extreme to bring in the faults of arsenic to prove that devitalization with this new preparation is wrong; therefore the development of trouble from arsenic in the teeth of your Hot Springs diseased sojourners is not germane to this controversy, which I would not indulge in but for the hope that something may be said that will advance the science of saving teeth.

When I speak of mummification I do not refer to the pulp only, but I include all the nerve fibrillæ, those microscopic branches which ramify all through the tooth, branching outward from the main stalk even to the very surface of the enamel. These fibrillæ must be considered, and if they are not treated—if they do not absorb some of the substance that *preserves*—I think the shade of the enamel will be darkened.

I fancy no dentist wants to see the evil effect of these fibrillæ on the shade. Let him add morphine sulphate (quite strong) to the devitalizer. I tried it with Nerve Qui-e-tus in my early experiments, and in every instance it caused the tooth crown to change to a pinkish color, and later on turn dark. My theory for that is that the morphia acts in some way in the first hours after the application to permit the red blood corpuscles to enter the dentine by expanding the fibrillæ, although this is only a surmise. Arsenic will devitalize in twenty-four hours. N. Q. requires about four days to thoroughly

penetrate throughout the tooth. Nearly twenty years' experience with it in a large practice has proven that the results are entirely satisfactory; better than anyone ever secured with any other method of devitalizing. Again let me say that I use Nerve Qui-e-tus exclusively to devitalize. I sometimes employ "pressure anaesthesia." I remove all nerves from the six upper anterior teeth and the lower bicuspids whenever the approach to them will permit.

Beaumont, Texas, April 17, 1909. MILES O. PERKINS.

MEETINGS

STATE SOCIETY MEETINGS.

Florida State Dental Society, Ocala, Fla., June 17, 18, 19, 1909.

Indiana State Dental Society, Indianapolis, Ind., June 29, 30, July 1, 1909.

Maine State Dental Society, Portland, Maine, June 24, 25, 26, 1909.

Michigan State Dental Society, Kalamazoo, June.

Ohio State Dental Society, Columbus, Ohio, December 7, 8, 9, 1909.

Oklahoma State Dental Society, Oklahoma City, Okla., June 3, 4, 5, 1909.

Utah State Dental Society, Logan, Utah, June, 1909.

West Virginia State Dental Society, Wheeling, W. Va., October 13, 14, 15, 1909.

Wisconsin State Dental Society, Milwaukee, Wis., July 13, 14, 15, 1909.

INDIANA STATE BOARD.

The next regular meeting of the Indiana State Board of Dental Examiners will be held in the State House, in Indianapolis, beginning Monday, June 7, 1909, and continuing four days. All applicants for registration in this state will be examined at this time.

This will be the last meeting of the year 1909. For further information and instruction address the secretary. F. R. HENSHAW.

Middletown, Ind.

IOWA BOARD OF DENTAL EXAMINERS.

The next meeting of the Iowa State Board of Dental Examiners for examination will be held at Iowa City, beginning June 7, 1909, at 9 a. m. Practical examination will be held in both operative and prosthetic dentistry. Applications must be in the hands of the secretary by June 1. For further information address

E. D. BROWER, Secretary.

Le Mars, Iowa.

SOUTH DAKOTA STATE BOARD.

The next meeting of the South Dakota State Board of Dental Examiners will be held at Sioux City, S. D., July 13, 1909, beginning at 1:30 p. m. and continuing three days. Both practical and written examinations will be required of all candidates, and all applications, together with the examination fee of $25 must positively be in the hands of the secretary not later than July 5, otherwise they will not be admitted to examination.

G. W. COLLINS, Secretary.

INDIANA STATE DENTAL ASSOCIATION.

The fifty-first annual meeting of the Indiana State Dental Association, to be held at Indianapolis June 29-30 and July 1, will be a profitable meeting to those attending, a meeting that will be noted for its many practical suggestions.

C. D. Lucas, chairman of the executive committee, has completed arrangements for six excellent papers. Four of these from our own state and two from special guests outside the state.

W. S. Kennedy, supervisor of clinics, promises the largest, the best and the mot practical clinic in our history.

No dentist in Indiana who cares for his mental improvement can afford to miss this meeting. Mark off the dates. Do it now!

OTTO U. KING, Secretary.

ILLINOIS STATE BOARD OF DENTAL EXAMINERS.

The next regular meeting of the Illinois State Board of Dental Examiners for the examination of applicants for a license to practice dentistry in the state of Illinois will be held in Chicago, at the Chicago College of Dental Surgery, southeast corner of Wood and Harrison streets, beginning Thursday, June 10, 1909, at 9 a. m.

Applicants must be possessed of the following requirements in order to be eligible to take the examination: (1) Any person who has been engaged in the actual, legal and lawful practice of dentistry or dental surgery in some other state or country for five consecutive years just prior to application; or (2) is a graduate and has a diploma from an accredited high school or a certificate signed by a state superintendent of public instruction or his duly authorized deputy or equivalent officer, acting within his proper or legal jurisdiction, showing that the applicant has a preliminary education equal to that obtained in an accredited high school, and is a graduate and has a diploma from the faculty of a reputable dental or medical college, school or dental or medical department of a reputable university and possess the necessary qualifications prescribed by the board.

Candidates will be furnished with proper blanks and such other information as is necessary on application to the secretary. All applications must be filed with the secretary five days prior to the date of examination. The examination fee is twenty ($20) dollars, with the additional fee of five ($5) dollars for a license. Address all communications to J. G. Reid, secretary, 1204 Trude Building, Chicago, Illinois.

INDIANA STATE DENTAL ASSOCIATION.

The fifty-first annual meeting of the Indiana State Dental Association will be held at Indianapolis June 29-30 and July 1.

Plans are being perfected to make this the greatest strictly state meeting in the history of our society.

OTTO U. KING, Secretary.

Huntington, Ind.

MICHIGAN STATE BOARD OF DENTAL EXAMINERS.

The next meeting of the Michigan State Board of Examiners for the examination of candidates for license to practice dentistry in Michigan, will be held at the Dental Department of the University

of Michigan in Ann Arbor, beginning Monday morning, June 14, at nine o'clock. Applications must be in the hands of the secretary at least fourteen days before the examination. Application blanks and rules governing examinations will be furnished by any member of the board.

A. B. ROBINSON, Sec'y-Treas.

MINNESOTA STATE BOARD.

The Minnesota State Board of Dental Examiners will hold a special meeting for the purpose of examining applicants for license on June 7, 1909. Meetings will be held at the Dental Department of the State University, in Minneapolis, Minn. All applications must be in the hands of the secretary by May 28.

For blanks and further information address

Lake City, Minn. DR. GEO. S. TODD, Secretary.

OHIO STATE DENTAL BOARD.

The regular spring meeting of the State Dental Board of Ohio will be held in Columbus on June 15-18 for the examination of applicants for license.

All persons wishing to enter practice in this state must make written application for examination.

Applications must be in the hands of the secretary at least ten days before the date of the examinations and must be accompanied with the fee of twenty-five dollars ($25).

For blank applications and further information address

F. R. CHAPMAN, Secretary.

305 Schultz Building, Columbus, Ohio.

NORTH DAKOTA DENTAL ASSOCIATION.

The joint meeting of the North Dakota State Dental Association and the Red River Dental Society was held at Fargo, N. D., May 10-11. Following are the new officers: President, Dr. W. J. Brownlee, Minot; vice-president, Dr. C. L. Thompson, Grand Forks; secretary, Dr. F. A. Bricker, Fargo; treasurer, Dr. S. Rowan, Hillsboro.

NEW HAMPSHIRE AND VERMONT DENTAL SOCIETIES.

The joint meeting of the New Hampshire and Vermont Dental Societies was held at The Weirs, in New Hampshire, May 18-21. A

joint meeting will be held again next year, time and place to be decided by the Executive Committee.

The New Hampshire Association elected the following officers: President, Dr. H. P. Baldwin of Manchester; vice-president, Dr. A. C. Foster of Rochester; secretary, Dr. F. F. Fisher of Manchester; treasurer, Dr. W. A. Young of Concord.

The officers of the Vermont Association are: President, Dr. C. F. Meacham of Bellows Falls; first vice-president, Dr. A. Z. Cutler of Bennington; second vice-president, Dr. L. E. Mellen of Middlebury; secretary, Dr. Harry F. Hamilton of Newport; treasurer, Dr. W. H. Munsell of Wells River.

IOWA STATE DENTAL SOCIETY.

The Iowa State Dental Society held its 47th annual meeting at Des Moines May 4-6, having one of the most instructive meetings ever held. The following were elected as officers for the ensuing year: President, Dr. F. M. Hunt, Des Moines; vice-president, Dr. T. F. Cooke, Burlington; secretary, Dr. W. G. Crandall, Spencer; treasurer, Dr. Frank Ford, Fairfield.

ILLINOIS STATE DENTAL SOCIETY.

The forty-ninth annual session of the Illinois State Dental Society was held at Danville May 11-14. About 500 members were present. The next meeting will be held in Springfield. The following officers were elected: President, Dr. E. H. Allen, Freeport; vice-president, Dr. C. C. Corbett, Edwardsville; secretary, Dr. J. F. Waltz, Decatur.

CONNECTICUT STATE DENTAL ASSOCIATION.

The Connecticut State Dental Association held its annual meeting April 20-21 at Waterbury and elected the following officers for the ensuing year: President, Frederick W. Brown, New Haven; vice-president, Frederick T. Murlless, Hartford; secretary, Dr. Robert H. W. Strang, Bridgeport; treasurer, Welford V. Lyon, Bridgeport.

KANSAS DENTAL ASSOCIATION.

The annual meeting of the Kansas State Dental Association was held at Ottawa and elected the following officers: President, E. Bumgrader, Lawrence; first vice-president, Dr. S. J. Renx, Leavenworth; second vice-president, Dr. S. S. Noble, Wichita; secretary, Dr. H. W.

Fessenden, Ottawa; treasurer, Dr. E. H. Bellew, Dodge City. The next meeting will be at Topeka.

ALABAMA STATE MEETING.

The Alabama State Dental Association held its annual meeting at Anniston May 11. The next meeting will be in Mobile. The following officers were elected: President, Dr. George W. Dandall, West Blocton; first vice-president, Dr. F. A. Johnston, Sheffield; second vice-president, Dr. E. C. Yielding, Birmingham; secretary, Dr. E. W. Patton, Selma; treasurer, W. J. Reynolds, Selma.

STATE BOARD OF REGISTRATION AND EXAMINATION IN DENTISTRY.

The New Jersey State Board of Registration and Examination in Dentistry will hold their semi-annual examination in the assembly chamber of the State House, Trenton, N. J., beginning Tuesday July 6th, and continue through the 7th and 8th. Practical examination held on the 6th, theoretical examination on 7th and 8th.

Practical work consists of soldering a gold or silver plate, one gold filling and one amalgam filling. Gold filling must be an approximal with an approximating tooth in position. Candidates requested to bring their patients. Photograph and preliminary credentials must accompany the application. Sessions begin promptly at 8 a. m., each day. Applications must be in the hands of the secretary ten days prior to the examination.

CHARLES A. MEEKER, D. D. S.,
Secretary of Dental Commission,
29 Fulton St., Newark, N. J.

MISSISSIPPI STATE ASSOCIATION.

The Mississippi State Dental Association held its annual meeting at Nachez May 10-12 and elected the following officers: President, Dr. J. F. Bronson; first vice-president, ————————; second vice-president, Dr. G. Stuart, Handy; secretary, Dr. L. B. Price, Corinth; treasurer, Dr. C. C. Crowder, Kosciusko. The next meeting will be at Jackson.

ABSTRACTS AND SELECTIONS.

THE PREPARATION OF THE MOUTH, IMPRESSION AND MODEL FOR THE SEATING OF BASE PLATES.

BY J. A. BULLARD, D. D. S., CHICAGO.

About a year ago I had the pleasure of reading a short paper before this society on "Taking Impressions of the Mouth." What I have to offer tonight follows along the same line of thought, inasmuch as the chief object is to obtain as accurate an adaptation or seating of bases for artificial dentures as we can.

Prosthetic dentistry, or plate work, is fast becoming to mean to some the making of plates for edentulous mouths, or where but two or three teeth still remain in position.

It has been stated that this branch of dentistry has made no progress in the last twenty-five years, but when you come to look at it from the point of view that, as soon as some method is developed for supplying missing teeth other than by partial plates, it is taken away from prosthetic dentistry and called something else—as is the case with bridge work, or where we put some little hook or button or any means of support other than the clasp on a partial plate, it is then dignified by being called "removable bridgework" and put in a class by itself—you can readily understand that prosthetic dentistry, instead of being a branch of dentistry, is a piece of the trunk with the branches pretty well cut away.

I wish to speak of those cases which depend upon the adhesion of a base plate to the tissues of the mouth to retain the set in position, and not upon springs, clasps, etc.

My remarks will apply more particularly to the upper jaw than the lower, and your attention will be called to a few conditions found in some mouths which need surgical attention before taking the impression.

Where there has been the extraction of a number of teeth, the

process, if broken, should be looked after; removing sharp, rough edges and loose pieces, and the gum made as smooth as may be.

Sometimes in extracting anterior teeth, especially the cuspids, the process is thin over the root and adherent to it; in springing the tooth out to loosen it the process is broken, the soft tissue under the lip is torn loose from its attachment and drops down, and if allowed to heal in this position will shorten the action of the lip and make a very low rim to the plate. This tissue should be put back in place and retained by two or three sutures until healed; or if a temporary plate is made it will hold it in place. Where the tissues have been lacerated and allowed to heal into the socket of a tooth so the attachment of the buccal tissue is brought to the ridge, it should be cut loose and packed away until healed.

Another condition in some mouths is that produced by wearing a full upper plate and only the natural anterior teeth below to occlude with it. The constant pressure and movement of the plate causes the anterior process to absorb away, leaving a ridge of soft tissue, which rolls around under pressure, and a satisfactory plate cannot be made over it. This tissue should be removed, and when the surface has healed the result will be a ridge of something like uniform density to work upon.

Just a word in regard to the absorption of the alveolar ridge and the length of time a plate should be worn.

We do not know why the alveolus is absorbed away so excessively in some cases and not in others, but a very accurate opinion can be formed as to whether it is going to take place or not before the teeth are gone. To cite two extreme cases; first, where the process is very dense and heavy, the teeth having long roots and short crowns, but have been lost through caries, with, however, no diseased condition of the roots and no tendency toward pyorrhea; if there it not too much damage done in extracting, the process in these cases will not absorb away excessively, but will change very slowly through life, and the soft tissue will remain hard and dense over it.

On the other hand, where a case presents with the process thin and frail and perforated by pus tracts, or where the teeth are being lost from advanced stages of pyorrhea, there will be great change after the teeth are gone and the gums healed. The remaining process will rapidly absorb, and in a few years almost entirely disappear.

A plate made for the first case, six months after extraction, might be worn without much discomfort for ten or fifteen years; while for the second case the plate would have to be changed every two or three years and would need considerable attention in trimming the rims and edges to avoid injury to the soft tissue as the ridge absorbs.

Generally speaking, plates should not be worn over five or six years. Oftentimes a patient will wear a plate too long after the ridge has absorbed away, and the sharp edge of the plate has cut a series of grooves and the soft tissue will hang in flaps under the lip. These flaps should be cut away, the rim of the old plate cut down and covered with antiseptic gauze to keep the freshened surfaces of the lip and ridge from healing together; and in two weeks you can make a plate which will be comfortable and useful.

In a few cases the extreme posterior ridge of the upper will be dense gum tissue, as large as your little finger, and will roll from side to side under pressure. If removed, the plate will set with much more stability.

After having the mouth in as favorable a condition as possible, our efforts pass on to the treatment of the impression and model, with the object in view of obtaining an equalization of the pressure of the plate against the tissues upon which it rests.

If we had a material from which a model could be produced that absolutely represented the mouth, the necessity of relief in the impression and upon the model would be reduced to a minimum.

The reasons for the required relief of the palate of an upper plate are: First, running through the palate on the median line usually there is a hard, bony ridge. This ridge varies in size from being nearly visible to the eye (but can be felt by the finger), to a large bony formation perhaps three-quarters of an inch across. This area of the mouth being hard and the gum tissue soft, it is necessary to construct the plate so that it may rest harder on the gum tissue than in the center of the palate.

Second, the hard structure of the plate does not change in form but slightly during the plate-wearing period of life, while the alveolar ridge absorbs away. The relief allows the plate to follow this absorption of the ridge and still avoid heavy pressure in the palate, and renders the plate useful for a long time.

The third reason for relief is to allow for the inaccuracy of

the plaster model caused by the expansion of the impression and model in setting.

The lateral expansion of the plaster of the impression is prevented by the rim of the tray, so it expands in line of least resistance, causing an arching of the palate. The plaster of the model expands in the same line, causing a second lifting of the palate. So the difference in the arch of the model and arch of the mouth is that caused by the two mixes of plaster of paris.

This has been proven by experiments carried on by various members of the profession, including Dr. S. J. Spence of Chattanooga, Tenn., and Dr. Prothero of our city has done some very positive work along this line.

The expansion of plaster was first called to my attention by Dr. E. J. Perry several years ago. He was very positive about it, as he had just repaired a china doll whose head had been broken off at the neck by filling the hollow of the head and neck with plaster and placing the parts in position. The repair was all right, but the fragile skull could not stand the expansion of its plaster brains, and opened up in various cracks.

So this third cause calls for the relief of the palate to bring the plate back to the form of the mouth.

Another reason for relief of the palate where considerable absorption has taken place is to prevent the pressure of the base upon the anterior palatine nerves as they come through the foramen just back of the anterior alveolar ridge. Pressure upon these nerves may cause severe pain. Quoting Dr. T. W. Brophy, "This pressure and irritation caused by the base plate resting upon these nerves is a frequent cause of neuroma and may necessitate an operation."

The same condition may exist where there has been extreme absorption of the process of the mandible. The mental foramen is brought within the area covered by the lower denture, and pressure upon the mental branch of the inferior dental nerve will cause great pain. The plate will have to be carefully trimmed at these points.

In the majority of cases the relief of the plate in the palate can best be accomplished by scraping the impression, and this calls for as much good judgment as any step in the construction of the base.

The hard ridge through the center of the palate should be

scraped out its entire length to about one-twelfth of an inch in depth, starting about three-eighths of an inch inside the posterior plate line and gradually deepening the relief to avoid sharp angles, and working forward through the impression to about three-eighths of an inch of the anterior ridge, gradually shading it out. The width of this relief will be determined by the width of the hard ridge through the palate. It will be widest at its posterior part and taper forward. A second relief is scraped on each side of the center one and carried forward and blended with it. This gives three saucer-shaped depressions in the plate. The center relieves the pressure in the center of the palate, and the ones on each side give relief and suction. The little ridges between the center and sides are scraped some, but not removed entirely to open the relief up into one chamber, so the plate feels as though it did not touch the roof of the mouth. The old form of air or suction chamber only partially relieves the pressure, as the plate rests hard on the palate, both anteriorly and posteriorly to it.

This scraping of the impression in the palate is all the work which is necessory to be done upon it. In a few cases where we have the large, bony formation in the palate, I use tin foil relief on the model, instead of scraping the impression, placing three, four or five thicknesses of No. 60 tin foil over the required area, as the whole palate is hard and needs uniform relief.

The separating material used is of considerable importance, and I have never seen anything for this purpose to equal sandarac varnish. The impression may be stained with shellac, and then apply the sandarac, or by using a little indellible lead, which should be scraped into the sandarac and makes it blue, so that, in separating, the line between the model and impression may be seen, and it gives a model with a hard, glassy surface. Care should be used to remove the excess varnish or other material used for the purpose. After applying the fluid to the surface of the impression with a camel's hair brush, wind a little cotton around a toothpick and wipe the excess out of every little depression of the rugae, or any little point on the ridge; for if these are filled with varnish it is the same as scraping the model in such places, and the plate will bear hard upon them.

Usually it is not necessary to do any work upon the model to equalize the pressure, only to relieve or scrape it around the plate

line, especially across the posterior line, so that the plate shall set up closely to the tissue, and will not leak.

In some mouths the ridge is very uneven, caused by teeth having been extracted at different times. Where they have been out the longest, the gum may be soft and spongy; and where the extraction has been of more recent date, the process is hard and prominent.

To even up the pressure on the ridge and avoid the rocking of the base over the hard points, scrape the soft ridge on the model, and cover the hard points with tin foil.

All mouths vary, and each has to be treated according to its peculiarities. Careful study, good judgment and attention to all the little details is necessary.

One of the great features of seating the base plate is to anatomically grind and arrange the teeth so as not to unseat it.

Dr. Prothero went into this subject so extensively in his paper that it is not necessary to discuss it here, except to say if there are no other teeth in the set ground, grind the four cuspid teeth sufficiently to take the points off, so they will not knock the plate loose on the lateral movement of the lower jaw.—*Dentists' Record.*

THE ART OF INVENTION.*

BY CHARLES CHANNING ALLEN, D. D. S., KANSAS CITY, MO.

So runneth the scriptures: "In the image of God created He him."

Not that God fashioned man from the dust in any physical replica of Divinity, that He endowed His sons with His own essence and made creators of them, that they might subdue the earth and have dominion over it. By this essence, this breath of life, man was given command of Knowledge and of Truth, through the imagination. And thus man was guided by this divine light, out of an echoless and unmarked night, into the radiance of his commanding mentality. This mentality impels man to use the forces and stores of nature as materials for his own ends, and make therefrom a new order which shall constitute his own progress and develop his own individuality.

Any departure from the natural that is the result of the men-

*Read before the Wisconsin State Dental Society, July, 1908.

tality of man is an invention; therefore, all artificial things are inventions. This applies to philosophers, religions and moral codes as well as to the mere material devices. It follows that the entire progress of humanity is due to this basic principle. It follows that that quality of the mind of man which has enabled him to emerge from the realm of mere animal instinct, governed entirely by external necessities, is worthy of our most careful consideration.

Invention, like many other phenomena, enlists several attributes of the mind, but it is indebted principally to the imagination. The ideas bearing upon any problem are subject to verification by the understanding, however, and must be adjudged by the unquestioning to be true. It is not sufficient, necessary as it is, that man be possessed of a great store of facts, that he should have made his mind a repository of miscellaneous information, but it is of first importance that he have understanding. The understanding must be cultivated if one is to be able to recognize truth. It is possible to so cultivate it, for truth, primary truth at least, bears its own credential to the understanding and that without necessity of proof. After first tutelage, it is most consistent with reason for one to gain knowledge from understanding than that one should gain understanding by virtue knowledge. One would scarcely expect Omnipotence to be an infinite encyclopedia of facts and possess all knowledge because of memory, but rather that God should know all things because of His infinite understanding. So the inventor must first have prepared his understanding for the reception of problems, and their solution, as they are taken from his creative imagination and the imagination of memory.

From circumstances which surround most individuals and more especially from the unsatisfactory and benighted condition of the art of teaching, it is impossible for many people to give systematic and directed effort to the cultivation of understanding, and what advancement is made along that line is made more or less unconsciously. Sometimes, by circumstances apparently fortuitous, men are correctly directed mentally, and unconsciously educate themselves in understanding, and thus prepare their minds for the proper handling of those problems which arise in every living man. Men have not sought by a systematic course of study to make of themselves professional inventors. Those who have been engaged in invention and who have given the world its most useful and wonderful achieve-

ments, were men thus unconsciously, or at least subconsciously prepared. This is why we so often ascribe an invention or discovery to a happy thought. It is not merely an accidental idea, but the mind has been prepared to recognize and lay hold of the appropriate truth as the imagination marshals its array of contingent ideas past the receptive mind.

Imagination is susceptible of a number of subdivisions, but those that interest us most in considering invention are creative imagination, reproductive imagination and critical imagination. In working out a fixed inventive idea or arranging correlative data, creative imagination is of first importance, but in the process of formulating this fixed idea, or in the selection of the correlative data, reproductive imagination, or the imagination of memory, comes first. Reproductive imagination is the imagination of memory and by its virtue one can bring to light, if he choose, former experience under the stimulus of associated ideas.

The power to use formerly entertained ideas in a new combination and creating the new out of the old, the unknown out of the known, is a phase of studied or synthetic invention. Creative imagination is the re-assembling or recombination of old ideas into new combinations heretofore unknown and new to the inventor. This is what constitutes invention principally, and is why experience and education as well as the faculty of observation are so invaluable to the inventor.

In the perfection of an invention it is very necessary for us to have, after the productive and the creative steps, a critical imagination in order that we may form judgment as to its value. And this power for rational criticism is a thing that is very rare. Every man has within him something of the power of the creative, but not all are able to look upon their work and see wherein there is error or where further and sometimes vital change and improvement may be made. They are so wrapped up in the fact that they have originated something that all power of logical analysis of that creation is lost and their invention fails because they hold it sacred to criticism.

Not all men are equally endowed with a talent for invention and indeed the inventions of most men are minor and only lesser improvements on the great achievements of the geniuses in this art, or are variations which come from everchanging circumstances. But it is natural that most men should imitate, and it is important that they

should, for all cannot lead. Where one has an idea to develop it may not appear at once how that end is to be accomplished, but he examines the problem as thoroughly as his ability will permit in order to find out all the requirements, and when that is done, and he has the case thoroughly in hand, he begins to call upon his imagination for those ideas which promise to afford a solution. Each one of these as they are presented to him is examined and tested by comparing it to the requirements and is accepted or rejected accordingly. Sometimes one will find only a portion of a suggestion available, and if so it is put to use and the process goes on. The vast majority of all the preliminary suggestions for any problem of any complexity at all will not bear the test of reason and must be rejected. This is why one who understands the art of invention and has given the subject the consideration it merits will not rush to his model shop every time he thinks of something which seems to promise well. Nearly all inventive ideas glow very much brighter when they first occur to the mind than they do when they have been subjected to a rigid test of reason. It is very much easier for a man who has trained himself to the feat, to construct a device in his mind, and change and rebuild it in his mind, time and again, than it is for him to make alterations in the solid metal and wood into which models materialize. In fact, the mind can be trained to such a point that remarkably complex productions can be perfectly pictured there, and all their various members can be seen in their proper relations. When one has reached the point where he can do this, the model-maker then becomes only the last consideration to him, and when he does reduce his invention to the material he will find very few changes to make. It frequently happens that after getting an idea a man may find no solution at all or anything of promise bearing upon the solution. He will be compelled to lay it aside, but it is not utterly repudiated. Rather it is filed away, and it is sure to recur from time to time, as something which promises to bear upon the problem comes to the mind. Frequently a valuable idea may lay dormant for years before the proper solution comes, and when it does come it is with astonishing clearness and finality.

For instance: The inventor of the gum camphor method of taking a matrix studied for a long time, as many others had, to find the best substance which could be used to fill a matrix for a porcelain inlay; one which would aid in forming it, and render it more easily

and safely handled, and at the same time be a substance which could be easily got rid of, leaving the matrix perfectly clean and not distorted in any way. He thought of waxes and other less pliable materials from time to time for several years, but there was an invariable objection of some kind. Sometimes the problem would not come to the surface for months, and then some new solution would suggest itself, only to prove valueless. One day during the Japanese war he bought a newspaper, opened it, and the headline on the first column of the page read: "Japanese Raise Price of Camphor." There was the final suggestion. That appealed to the mind at once as the solution of the problem. For the inflammability of camphor was known; that it burns completely and leaves no ash was known; that it was sufficiently waxy to use for this purpose was known. In short, it had no known serious negative qualities, but had enough known positive qualities to justify the mind at once in accepting it as the probable solution of the problem and warrant its trial. It proved to be good and has been much used since.

So many inventions are solved with apparent ease after a lapse of time that those who have given little attention to the subject are apt to think that the principal source of invention is happy thought.

Numerous problems require little time or study after the first ideas are suggested because the inventor is so well informed along these lines that solutions are presented at once. At other times years and even a lifetime may be spent in the development of an idea. Men worked generations after the discovery of aluminum in clay to find a method, other than a mere laboratory experiment, for the production of that now common metal.

When a great invention has once been produced it opens up new fields of endeavor and affords new opportunities for the inventor, especially along the line of minor inventions and improvements. Take the invention of vulcanized rubber, a most important production, and how many thousands of inventions have been made which are dependent upon it! The end is not yet; they are being produced every day. The inventions dependent upon the steam engine are innumerable.

In so short a discussion no catalogue of great inventions can be made, but one class of inventions which has done the world untold good is seldom mentioned, and is worthy of special attention. Reference is made to the remarkably ingenious experiments devised and

carried out practically by the physicists and chemists for the demonstration of natural laws, such as the measure of atoms, molecules, ions, etc., and the measuring of the velocity of light, electricity and hundreds of other marvelous conceptions which have originated in the fine brains of these students of nature. Such inventors are none the less remarkable when we consider that they are almost always made without hope or expectation of any reward other than the satisfaction to be derived from the fact of having established a truth in such a way that it will serve man yet to come.

In fact, until very recent times the inventor's reward was a precarious factor and most frequently he neither reaped honor nor substance from his efforts in behalf of his fellow man. Many times he was persecuted and reviled, and it was positively dangerous to his personal safety to be known as one who searched in new fields. Many a man whose brain has stored genius for this kind of advancement has suffered ignominy and death. Many men of this class have been compelled to suffer ridicule, have been called crazy, charlatans, cranks and impostors. We have had a class of men, however, wild-eyed and impractical through ignorance. who have deserved little dignified consideration. These men have been self-styled inventors and while some of them have not lacked in sincerity and enthusiasm, their utter failure to understand the requirements and limitations of their problems has done much to bring discredit to men of finer instinct for the art, and really deserving of help and encouragement. These evil days, however, seem to be upon the wane, and now a man of merit can secure audience when he desires, and is given all consideration and respect by an appreciative public. The public has recognized the dignity and importance of invention as an art, and requires that the devotees of this art be men of understanding and attainment.

The time is not far distant when men will make improvement a vocation and become professional inventors, and schools will seek to train men for this calling. Then will the inventor's life cease to be the somber romance and lonely tragedy that it has been all too frequently in the past.

There are two rewards which follow invention; one is the immediate reward which accrues to the inventor, and the other, which is the portion of humanity. The inventor is rewarded riches, fame and honor, but these alone do not constitute his only compensation. Another, and to the true devotee of the art the greatest, is the satisfaction

one has in the mere act of originating something novel and supposedly useful. Nothing can be compared with the inventor's sublime mental concentration and oblivion to all things exterior. He is alike unconscious of heat and cold, pestilence and famine; he eats as an incident and sleeps when overcome with fatigue; rags or broadcloth are the same to him; he is alone in the midst of the multitude, wrapped up, not in himself, but in his idea, and when that is wrought, his eye gleams with infinite beatitude and his heart blooms with glorious philanthropy.

Man no longer sits in unkempt squalor gnawing at the fetid bone which his prowess has gained him in hand to hand conflict. He no longer goes about half naked or begirt with untanned skins, chilled by the wintry blasts and burned by the summer sun, or, at the close of day, compelled to crawl into some noisome cave, unwarmed and unlit, to brood in benighted ignorance until he sinks into the slumber of exhaustion. He no longer depends upon the fortune of a day for his sustenance or when that fortune fail lies down in hunger, companion to his wolfish dog. Material benefits are his by conquest. His fields are tilled and harvested, his food is selected and prepared, his garnered stores insure him against an evil season. The raiment which protects him from the elements is fabricated to its purpose and serves its end. His hearth warms and cheers him and his rooftree shelters his domestic peace and hospitality. Afforded relief from the immediate necessity of provision for the physical being, man turned to the development of his intellect. Thus was evolved man's philosophy, the servant of wisdom and handmaid of truth, out of which comes our governments, our social order, our laws, our codes, and our sciences, and bids him seek solace in the sweets of meditation. It crowns him with that final glory of his life—religious faith, that subtle authority which ministers to his youth, sanctifies his love, blesses his children, consoles him in his adversity and lights the star of hope when falls the eventide.—*Review.*

MISCELLANEOUS

PROSTHETIC WORK.

The constructive plan of all prosthetic work has as much, if not more, to do with success than fineness of detail in fitting, because, like any other structure, if it is placed upon an inadequate or poorly balanced foundation the stress of mastication afterward is sure to weaken the attachments at some point, foretelling an early failure.—*Dr. C. N. Thompson, Review.*

APPLICATION OF ARSENIC.

In applying arsenic to a cavity that extends below the gum, moisten the cavity with eucalyptol and completely fill with temporary stopping. Drill a hole through the stopping to the point where you wish to make the application, apply the arsenic, close the opening with more gutta-percha and there is no danger of poisoning the gum tissues.—*W. E. Tennant, Review.*

RESOLUTIONS ON DEATH OF DR. A. W. HARLAN.

Whereas, Through the death of Dr. A. W. Harlan the Odontological Society of Chicago has lost its founder and a former president, one who had been most actively connected with the society for twenty-five years, whose vigorous personality won for him the respect, admiration and love of his colleagues; therefore, be it

Resolved, That the members of the Odontological Society of Chicago express their profound sorrow at the loss of their associate, and extend heartfelt sympathy to the bereaved family; and be it further

Resolved, That these resolutions be spread upon the minutes of the society, that a copy be furnished to the dental press for publication and that a further copy be transmitted to the family of the deceased.

J. W. WASSALL,
C. N. JOHNSON,
W. V.-B. AMES.

PERSONAL AND GENERAL

Dentist Receives $10,000.—A dentist in Chicago has been paid $10,000 from an actor for dental services for the next ten years.

Married.—Dr. Ren A. Hand, a dentist in Camden, N. J., and Miss Elizabeth Hughes Blattner of West Cape May were married recently.

Dedicates New College Building.—The new Dental College building at Ann Arbor was recently dedicated with three days' ceremony. Nearly 500 members of the Alumni were present.

Doctor Daymude Celebrates.—Members of the Warren County Society were guests recently of Dr. O. M. Daymude at Monmouth Ill., commemorating the twentieth anniversary of his practice in that city.

Dentist Shoots Man.—A dentist in Junction City, Kan., shot a man who had assaulted him in his office because the dentist had sent him a bill for services which he thought excessive. The condition of the wounded man is critical.

Injured.—Dr. George Dorman, of Dorman Brothers, at Manchester, Iowa, was seriously injured by the explosion of a vulcanizer. The hearing of one ear was destroyed and one eye was so injured that he will be unable to resume practice.

Suspects Arrested.—Two men with long police records and who are suspected of having been connected with numerous dental robberies are under arrest at Albany, N. Y., and another is being held by the Columbus police as a suspect in the Fitzgerald Dental Company's robbery.

Will Build New Factory.—The Columbus Dental Co., will build a new fireproof factory. Plans have been drawn and ground will soon be broken for the building. This firm has been remarkably successful in their work and the sale of their product, which consists mainly of Steel interchangeable facings is increasing rapidly, the number for April being over 100,000.

Robberies.—Drs. E. J. White, Atlanta, Ga., loss $100. P. P. Musser and William Wadell, Salt Lake City, loss $50. A Dental Depot in Boston; loss $4,500. T. A. Myers, Oklahoma City, Okla., loss $100. J. M. Glenn and J. A. Newman, Jackson, Tenn., loss $25 and $75, respectively. At New Brittain, Conn., George A. Lawton, loss $25; E. S. Bryant, loss $50; Henry S. Nichols, loss $25. S. Pepper, Bayonne, N. J., loss $75.

Removals.—Drs. M. G. Skinner from South Lyons, Mich., to Ithica; J. Steele McCreight from Monmouth, Ill., to Macomb; Harry Parker from Clayton, N. J., to Bridgeton; J. A. Anderson from Dallas, Tex., to Marlow, Okla.; Fred Patterson, from Terre Haute, Ind., to Decatur, Ill.; P. E. Kable from Merrill, Wis., to Monico; F. L. Joslin from Poynette, Wis., to Merrill.

NECROLOGICAL

Dr. Ernest Browning, a dentist in Kansas City, died recently in Roswell, N. M., where he had gone in search of health. Dr. Browning was an '05 graduate of the Western Dental College at Kansas City.

Dr. O. C. Carrell, an Astoria, Ill., dentist, was found dead in his office recently. Dr. Carrell was 30 years old and was formerly located in Sigourney, Iowa.

Dr. Frank Y. Herbert, for many years a dentist at Ottawa, Ill., died at his old home in Ada, Ohio. For the past several years he had been in Denver, Col., in hopes of regaining his health.

Dr. A. W. French, who had for many years practiced dentistry at Springfield, Ill., died April 27. Dr. French was 88 years old and was in practice until a short time before his death. He was a personal friend of Abraham Lincoln. He was a graduate of Washington University, St. Louis, 1867.

Dr. Curtis E. Laird, a Des Moines, Iowa, dentist, died April 30. Dr. Laird was a '91 graduate of the Iowa State University Dental School and was associated with Dr. W. D. Smouse.

Dr. W. H. Chilson, a prominent Wisconsin dentist, died at his home in Appleton, April 28. Dr. Chilson had been twice president of the Wisconsin State Society and founder of the Fox River Valley Dental Society. He was 68 years old.

Dr. William G. Loppenthien, a dentist of Tucson, Arizona, died May 9. He was 35 years old and had moved to Tucson from Ludington, Mich., on account of his health. He had practiced in Tucson for 7 years. Dr. Loppenthien was a '97 graduate of Chicago College of Dental Surgery.

Dr. B. Oscar Doyle, a prominent dentist in Louisville, Ky., died suddenly on a street car in that city May 5. He was born in Louisville in 1845 and graduated from the Ohio College of Dental Surgery in 1872. Dr. Doyle was for a number of years President of the State Board and was at one time President of the Kentucky State Dental Society. He was also a member of the National Dental Association.

Dr. Robert A. Wilson, a young dentist in New Orleans, was found unconscious near the railroad track near Houston Tex., and died from his injuries three days later. He was 26 years old and had graduated at the head of his class in the New Orleans Dental College in 1907.

Dr. C. Newlin Pierce, for many years a dentist in Philadelphia, died May 16 at the age of 80 years. Dr. Pierce had been Dean of the Pennsylvania College of Dental Surgery, from which college he was graduated.

DENTAL PATENTS

Fig. 1.

911,510. Dental Handpiece. Robert M. Mayes, San Antonio, Tex. Filed July 3, 1908. Serial No. 441,854. 1. In a dental hand-piece, the combination with an outer casing, of a rotatable spindle mounted in the

FIG. 1

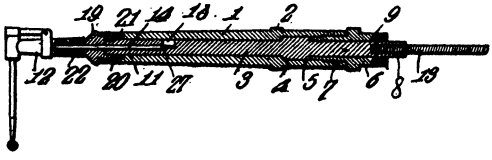


FIG 3

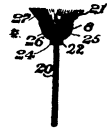


FIG. 2

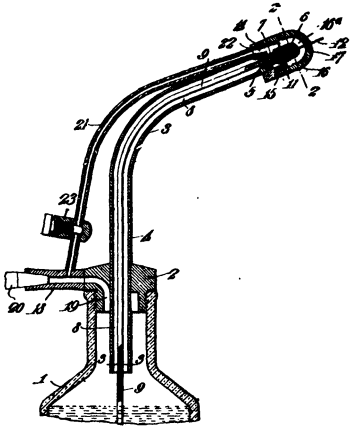
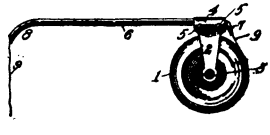


FIG 4

FIG 5



casing and having a central longitudinal bore in its forward end, a transverse slot extending from its periphery to its axis at the base of said bore and having a flat bottom and an inclined surface extending from the bottom of the bore to the bottom of the slot.

Fig. 2.

911,646. Atomizing Dental Obtunder. William A. Cook and Grant S. Hadley, Coldwater, Mich. Filed May 9, 1908. Serial No. 431,930. 1. A dental obtunder comprising two tubes through which liquid and compressed air are separately forced, a combining tube through which the liquid and air pass into the atmosphere, the former in a finely divided condition or spray, and a second air tube arranged to carry compressed air to the issuing spray and surround the same with an envelope of expanding air.

Fig. 3.

912,051. Dental Brush. James H. Abbott, Philadelphia, Pa. Filed July 1, 1905. Serial No. 267,873. 1. In a device of the character described, a spindle having an integral head, a sleeve engaging the spindle, bristles and a flanged sleeve engaging said sleeve, and retaining the bristles between its flange and the head.

Fig. 4.

911,659. Dental Mirror and Attachment Therefor. August J. Kleberg, Washington, D. C. Filed March 3, 1908. Serial No. 419,038. 1. in a dental mirror having an upstanding flange extending partially thereabout and movable thereon, substantially as described.

Fig. 5.

911,664. Dental Floss-Holder. James P. Locke, Toledo, Ohio. Filed July 13, 1908. Serial No. 443,257. In a device of the described character, a spool, a holder for the spool comprising a pair of opposed spring-arms adapted to clasp and to revolubly support the spool therebetween, and a tube having its inner end mounted upon the spool-support and having a curved outer extremity, the arrangement being such that a thread may be guided from the spool through the tube to its outer extremity.

State Board Affairs—Drs. Henry L. Whipple, of Quincy, and T. A. Broadbent, of Chicago, have been appointed as members of the Illinois State Board to succeed D. H. Damron and C. R. Taylor. F. W. Chandler who was appointed a member of the State Board of North Dakota in 1906, and who has been refused the privilege of participating in the business of the board, has been declared by the Supreme court as having been properly appointed. A dentist in Jersey City has been arrested for practicing without a license and will sue the State Board, alleging he is being persecuted because he advertises, he is a graduate of University of Pennsylvania and has a Pennsylvania license. A dentist, Kelly, who has been practicing for many years in Peoria and who has been in court many times, has been fined $100 and costs for illegal practice. The special house committee appointed by the Missouri legislature to investigate the Missouri State Board, criticises the conduct of the board and recommends that the law governing the board be revised. Out of thirty-eight applicants before the Mississippi State Board, nineteen were successful.

THE TRAVELING SALESMAN LAST TAKES HIS PLACE IN GALLERY OF STAGE TYPES.

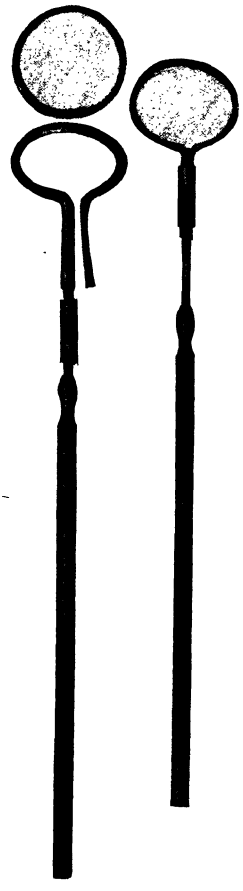
There are few professions or modes of business life, or even methods of artisanship which have not been idealized by the diligent searching playwright into stage puppets which, either through caricature or exaggeration, are evolved into comedy roles whose chief reason for existence is a mission of laugh production. The lawyer, doctor, banker, baker, the tradesman and even the newspaper reporter are well known stage types, but "The Traveling Salesman," the new comedy which is meeting with such great success at the Illinois Theater, Chicago, is probably the first play to take the "drummer"—the man who sells goods on the road—and turn him into the most important character of a footlight entertainment.

The play is being presented with the original New York company which comprises Frank J. McIntyre, Elsie Ferguson, William Beach, Sarah McVicker, Arthur Shaw, Percival T. Moore, Edward Ellis, Nicholas Burnham, H. D. Blakemore, R. C. Turner, Richard Ogden and Maude B. Sinclair.

Performances nightly, Sunday included, matinees Wednesday and Saturday. Prices, 50c to $1.50, no higher, and mail or telegraph orders always receive especial attention at The Illinois.

INDEX TO ADVERTISEMENTS.

THE SANITA REFLECTOR



The illustration herewith shows fully the working of this mirror. The glass can be instantly removed and the nickel parts sterilized. The glass can be immersed in any antiseptic solution, and the handle and frame can be sterilized by boiling in water.

The OBJECTIONABLE FEATURES of other mirrors of this type have been overcome, from the fact that both sides of the lens are glass. In the Sanita Reflector you get two plane mirrors for the price of one, as both sides of the lens are silvered and when one is scratched or ground, by reversing the glass you have a new mirror.

While the magnifying lens has a glass back only one side can be used, as all magnifying lenses are concave and consequently two cannot be cemented together.

MANUFACTURED ONLY BY

W. H. HELMERICH & CO.

145-153 FULTON STREET

For Sale by Leading Jobbers CHICAGO